Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

REC'D
LIBRARY
JAN 15 '41
BUREAU
OF
PLANT INDUSTRY

WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

46148

DEC 1940

Not for publication without
prior consent of this division.

REPORT FOR THE MONTH OF DECEMBER 1940.

HUNTLEY:

December was generally mild and dry in marked contrast to November. Subzero temperatures were recorded on three days near the middle of the period, but maximum temperatures were high enough at intervals to thaw out the ground so that sugar beets could be lifted and some plowing done. Precipitation consisted of light falls of snow and sprinkles of rain, all of which dried up quickly. The total for the month was considerably below the average.

Weather conditions were almost ideal for cattle and lamb feeding operations. Local stockmen report excellent gains being made and an abundance of feed available. Several carloads of fat stock have left the local feedlots each week during the month. Farmers have been engaged in threshing corn and alfalfa seed, baling hay and straw, and when possible, doing a little plowing. On the Dryland fields at the station some crested wheatgrass was sown during the month and nursery plantings were continued.

Maximum temperature, 63°; minimum, -9°; precipitation, 0.12 inch.
Annual precipitation 1940, 11.06 inches. 31-yr. ave., 13.29 in.
Average precipitation for December, 0.72 inch.

SHERIDAN:

December was comparatively mild with a mean temperature about 4° above the average for the month. There was only one short period with below zero temperatures, and that was not severe. The ground was mostly bare of snow during the first 10 days and the last week of the month, but there was about 4 inches of snow on the ground during the coldest weather, and the month ended with 2-1/2 inches of new snow. Livestock was able to graze, where grazing was available, through the most of the month, and only light feeding was required. No field work of any kind was possible at any time during the month.

Maximum temperature, 57°; minimum, -14°; precipitation, 0.44 inch.

DICKINSON:

Mild weather was the rule during most of December. The mean temperature of 23.6° was about 7° above normal. Light rain fell on three days and there was fog during a few days at the end of the month, but the total precipitation of 0.23 inch was only half of normal. The ground was nearly bare of snow until near the end of the month when 2 to 3 inches of snow fell. Ice was 14 inches thick on the river.

The total precipitation in 1940 amounted to 17.12 inches. This is nearly 2 inches above normal. Precipitation was very light during the fall and winter of 1939-40, but heavy rainfall in April wet the top soil thoroughly so that all crops started in good shape. Precipitation during May and June was light and before the first of July all crops were in need of moisture. Dry weather continued until after the middle of July so that early grains were low in yield. About 3 inches of rain during the last half of July was of benefit to late-maturing small grains and corn.

Yields of wheat, oats, and barley on the rotations were slightly below average and less than half of the high yields harvested in 1939. The yield of 28.5 bushels per acre of ear corn on the rotations was nearly twice the long-time average. Cultivated grasses produced good hay yields and average seed yields.

Good rains during September and October provided the best growing conditions for winter wheat, rye, and grasses of any year since 1923. Crested wheatgrass and bromegrass made a growth of 6 to 8 inches or more and were green until November 9. Temperatures lowered gradually so that the new growth cured or hardened and is providing excellent feed during the winter.

The fruit crop was the best harvested at the station since 1935. Nearly all varieties of plums, apples, and crabs produced heavy crops of fruit of fair size and good quality.

Trees made an excellent growth during the season. A good moisture supply and the gradual lowering of the temperature in the fall should provide a better than normal winter condition so that little killing is expected.

MANDAN:

Horticulture: The year 1940 was a good year for horticultural plantings and crops. For the most part trees and shrubs suffered little winter injury, spring rains were ample, bloom was heavy, and record yields of many fruits resulted. Except for plum borers, blister beetles, and leafhoppers, insect pests and diseases were less troublesome than usual. No blight of apples and crabs has been observed at the station since the 1936 drought.

Fruits in variety tests included apples and crabs, plums and plum hybrids, sandcherries, currants, gooseberries, raspberries, grapes, and Juneberries. Apples and crabs produced more fruit than in any previous year, some individual trees yielding over 500 lbs. Duchess, Longfield, Erickson, Haralson, Winton, Melba, Selections 28-2 and 28-10, and Anoka were among the highest yielding apples. Florence, Alexis, Dawn, Robin, Virginia, Sweet Russet, Bedford, and Dolgo were among the highest yielding crabs. Many of the new Canadian varieties produced fruit for the first time in 1940.

Plums also produced record yields. Minn. 5, Monitor, Winona, Underwood, and Minn. 17 were the highest yielding Japanese hybrids. Sel. 76, Sel. 27-5, Forest Garden, Sel. 49, and Golden Anniversary were the highest yielding natives. Early maturing varieties were better than late maturing varieties as a rule, the latter being adversely affected by the late summer drought.

Tecumseh and Minn. 133 were two of the best early varieties.

Cherries produced fair to good crops in 1940. Sour cherries such as Wragg and English Morello produced fruit and two sour cherry selections of Russian ancestry started to bear. Nanking cherries produced good crops. Some of the best under test were P.I. 36086, P.I. 69058, P.I. 69056, and Sel. 30-4. Prunus japonica cherries were severely killed back and produced but little fruit. Sandcherries produced very heavy crops, but probably due to overbearing the quality of the fruit was not up to standard. Sandcherry hybrids such as Ruby, Sel. 26-4, Oka, and Champa were superior to the straight sandcherries.

Grapes produced a fair crop, Beta and Alpha being the highest yielders. Covering the vines with soil during the winter resulted in higher yields. Moderate pruning showed to advantage over severe and no pruning.

Raspberries produced fair yields. Newburgh, for the first time outyielded both Chief and Latham. Sodus, a purple raspberry, yielded well, as did Leucretia dewberry.

Currants yielded good crops, Red Cross and London Market being the highest yielders. Red Lake was the best of the large fruited varieties under test.

Gooseberries produced record heavy yields in 1940. Kanega, Kana, Katage, Minn. 18, and Sel. 30-6 were the highest yielders. Selections 26, 26-1, and 30-4 bore good fruit and one or more appear to be in line for naming.

As usual, Success Juneberry outyielded other varieties and selections. Birds are very fond of this fruit.

Native plums appeared to be as good or better than other stocks under trial in the plum stock experiment.

In the east coulee planting, straw mulch was effective in preventing soil erosion, but not in preventing weed growth. Heavy yields were produced.

In the pruning experiment, moderate pruning resulted in higher yields than severe or no pruning. Severe pruning showed some advantage in the size of fruit.

A new cultural experiment was started, replacing the old one which was discarded because of lack of uniformity, when many trees were killed in the years of drought. The new experiment has each treatment replicated four times as compared to only two times in the old.

A number of new selections were made in the fruit breeding blocks, and several of the old selections under test showed up very well. Some of them should be introduced in the near future, including a few selections of the drought resistant Golden currant.

Potatoes produced fair yields in 1940. Warba was the highest yielder in the main variety test and also in the nursery test, while Irish Cobbler ranked second. Close spacing (12 inch) of potatoes in the row resulted in higher yields than moderate (18 inch) or wide (24 inch) spacing. The wide spacing gave the lowest yields.

Vegetables

The seasonal yields were fair to good. Heat in midsummer apparently caused more damage than lack of moisture. Cabbage and other members of the Cruciferae were the worst affected. There was considerable smut and firing in both sweetcorn plantings, and potatoes seemed much affected by heat. A summary of yields from the acre garden is given below.

Beans - wax	187 quarts	
Beans - navy	50 pounds	
Beets - early	387 pounds	
Beets - winter	253 pounds	
Carrots- early	180 pounds	
Carrots - winter	321 pounds	Third planting did not germinate
Cabbage	276 pounds	Late planted varieties damaged by heat
Cauliflower	23 pounds	Same as cabbage
Cucumbers	102 pounds	
Eggplant	few	Much heat and drought damage
Melon - water	306 pounds	Good yield much reduced by pilfering
Melon - musk	40 pounds	Heat damage
Onions	684 pounds	
Parsnips	255 pounds	
Peas	194 quarts	
Peppers	few	Heat damage
Potatoes	412 pounds	
Pumpkin	410 pounds	
Rutabaga	140 pounds	
Squash - summer	74 pounds	
Squash - winter	440 pounds	
Sweetcorn	736 ears	
Tomatoes	507 pounds	

Other projects carried on with vegetables included tomato variety test, sweet corn breeding, and tomato breeding. The tomato variety test included Pritchard, two new varieties from Burpee, namely Sweetmeat and Nameless, and three strains of N.D. 40 from the State College at Fargo. Pritchard gave a fair yield as was also obtained from Sweetmeat. The quality and size of this variety was very good, and as it seems adapted to this region it is to be included in the next year's work. The N.D. 40 strains seemed very promising and a great improvement over previously introduced varieties. The best strain is introduced to the trade in general this year under the name of Bounty.

The past season was a very bad one for smut in sweetcorn, and this was taken advantage of in sweetcorn breeding to eliminate susceptible strains. Quite a number of "families" proved almost free of smut and had exceptional vigor.

In the tomato breeding project Earliosa was the best variety as to yields and size. A small quantity of seed of three varieties recently introduced is saved each year from the best plants in order to keep up the stock.

The usual plantings of flowers on the grounds was carried out and were in general successful. Of perennial plantings Regal lillies and Delphinium Pacific Giants were the most outstanding. Hopa, crab, double flowering plum, and French hybrid lilacs produced the best show of ornamental shrubs on the grounds.

Weather: The month of December was mild, but not quite so mild as December 1939. The lowest temperature was -18° on the 12th. There were only 7 days with minima below zero. The maximum temperature was 48° on the 5th and 23rd. The total precipitation was 0.41 inch, and the total snowfall was 4.6 inches. The heaviest snowfall came on the night of the 31st, with 3 inches.

The total precipitation for the year was 16.14 inches, compared to the station 25-year (1914-38) average of 15.18 inches, and the 65-year (1875-1939) average for this area of 16.40 inches.

ARCHER: (Report for November and December, 1940)

November weather was mild except during the period November 10-14 when the temperature dropped to -17°. Precipitation during November was in excess of normal. Rain occurred on November 8 and snow on November 9. The precipitation totaled 0.33 inch and was beneficial to winter cereals.

December was mild except during the period December 11-16 when the temperature dropped to -15°. The total precipitation during December was 0.31 inch, which is slightly less than the 27-year average.

Winter cereals are in a very good condition. A few excessive winds have caused no soil blowing in the fields. The mild weather has been favorable to livestock in that little feeding has been necessary. Generally, feed supplies are sufficient for normal conditions.

November - Maximum temperature, 60°; minimum, -17°; precipitation, 0.58 inch.

December - Maximum temperature, 65°; minimum, -15°; precipitation, 0.31 inch.

NORTH PLATTE:

Mild and warm weather prevailed throughout most of the month. The mean temperature was 30° or 4.4° above normal. The only cold weather was recorded during the second week of the month at which time 5.2 inches of snow fell. There was little wind and no drifting of the snow at this time, but on December 16 a high wind swept most of the snow from bare fields. A light rain the last day of the month added some moisture to the soil.

The total precipitation recorded at the table station for the year was 14.20 inches or 4.23 inches below the 34-year average. Lower readings have been recorded in eight of the 34 years, and six of these records were recorded in the past ten years. The Weather Bureau station, located 6 miles from the table station, recorded 10.98 inches of precipitation for the year or 7.43 inches below normal. During the 66 years of the North Platte Weather Bureau's history, lower readings were recorded in 1910 and 1931.

The maximum temperature of 110° for the year was recorded on July 24, and the minimum reading of -21° was recorded on January 17.

The weather was warm enough during the last two weeks of the month for the wheat to resume growth. There has been some killing in the D.L.A. plots, but with favorable weather conditions the remainder of the winter, there will be a fair stand on most plots.

In the corn plots, the wheat drilled on the ridges is mostly killed. There was no snow protection on these rows at the time of the cold weather in November. Some of the more tender varieties in the varietal plots may show as much as 30 to 40 percent loss. Wheat in the southern panhandle counties of the state shows little or no killing.

Maximum temperature, 64°; minimum, -2°; precipitation, 0.68 inch.

AKRON:

December was fair with moderate temperatures except for two periods of snow (10-13 and 19-22) and one of below zero weather. A cold wave with four successive nights of below zero temperatures began on the 13th. The total precipitation was 0.21 inch. The established average is 0.59 inch. The minimum temperature was -16°, and the maximum was 69°.

Sorting beans, painting stakes, preparing plot identification tags, and other odd station duties have occupied work time.

COLBY:

December was unsettled with much cloudy, misty, and snowy weather without much precipitation. The mean temperature was 5° above normal. The night temperatures averaged much higher above normal than the day temperatures. There were only 4 days when it was noticeably windy. On the 6th it was windy and dusty. On the 12th and 15th the wind drifted the snow considerably. On the 28th there was some soil blowing. The total precipitation was about 71 percent of normal, mostly in the form of snow. There was considerable mist and some rain. The snowfall was 4.1 inches.

The winter wheat remained green or brown, depending upon the amount of snow cover at the time of the subzero weather in November. The wheat in deep furrows, in sorghum or corn stalk fields, and in small grain stubble remained green. That which never caught much snow gradually turned brown except at the base. Some of this is gradually drying up completely. The roots seem to be completely rotted off, apparently killed by the freeze. There is much winter killing on our fallow plots, especially where the plant is on a ridge or in fairly loose ground. The dead plants appear to have had a good start but were mostly short on brace roots. The continuously cropped plots, which came up to only partial stands and had made almost no growth, show almost no winter killing. Not only the cornstalk and stubble plots, but such plots as M.C.A. appear very promising now. There is very little growth, but the plants are green.

The sorghum threshing was finished on the 7th. The milo yields ranged from 1 bushel on 575 B to 20.2 bushels on 155 D (fallow), and averaged 9.5 bushels. In rotations 151 to 156 the fallow plots averaged 19.6 bushels, the green manured plots, 3.6. The kafir plots averaged 5.2 bushels.

Maximum temperature, 67°; minimum, -5°; precipitation, 0.37 inch; snow, 4.1 inches. Precipitation, 53-year average, 0.52 inch; precipitation, 1940, 14.78; 53-year average, 17.31.

HAYS:

The month of December was generally mild and was free from any zero weather. The mean temperature was 34.5° or nearly 3° above normal.

The soil has not been frozen much of the time, but it has remained cold and wet because of the rains and snow during the month of November and the precipitation during the period December 11 to 15. Fields and dirt roads have been muddy all month making the hauling of feed very difficult.

Despite the mild winter weather the winter wheat of which the top growth was frozen and killed to the ground by the sudden low temperatures in November has been very slow starting new growth. There is a small area (an easterly-westerly strip, of which the south edge is a few miles south of Hays and the north edge 8 or 10 miles north of Hays) in which the killing appears to have been more severe than outside this area. The line of demarcation is not sharp but is quite apparent.

From reports coming in, the most severe killing seems to be the wheat seeded in early October, which generally is a very good time for seeding. Wheat seeded late on loose ground and that reseeded where the grasshoppers had killed out the first seeding has suffered a heavy loss. Wheat that was just emerging or about to emerge seems to have survived better and is apparently in good condition. The acreage of this kind is small. Some cases have been reported where very early seeded wheat has been killed. Such reports, however, are few. It appears that in most cases the heavy top growth produced by early seeded wheat afforded a shelter that prevented damage to the roots of the plants although the top growth was killed.

In the fields that have suffered slight damage, most of the killing occurred in the drill rows on ridges, or on high spots. The killing also seems to be more severe where the soil about the plants was loose. On the Dry Land project and on the Experiment Station fields it now looks as if the amount of killing may be between 10 and 15 percent, however, some that now appears dead may recover. It is believed there is sufficient wheat left, so far as stand is concerned, to make a crop.

Rye has not been injured by the freeze and looks fine. It is interesting to note that volunteer oats have survived as well if not better than the wheat and are making more growth than the wheat.

Maximum temperature, 68°; minimum, 3°; precipitation, 0.82 inch including 7.9 inches of snow. The total precipitation for the year of 1940 by the Weather Bureau record is 22.91 inches or 0.32 inch above normal. This is the first year the annual precipitation has been above normal since 1932.

GARDEN CITY:

Precipitation for the month amounted to 0.39 inch, which came in the forms of mist, snow, and rain. This moisture fell in three periods, with insufficient time between falls to allow the sorghums to dry, therefore, the threshing and weighing has been delayed. This 0.39 inch is slightly below the 32-year average of 0.46 inch. Temperatures were above average for the month. The mean maximum was 47° which is approximately 3° above the long-time average, and the mean minimum was 23.6 which is approximately 6° above the long-time average. However, the maximum for one day was 9°, which is unusually low. The average wind velocity of 6.2 m.p.h. was approximately normal.

The total precipitation for the year was 18.42 inches, the average is 17.06 inches. This is the first year the rainfall was above average since 1933. This above average rainfall gave this area the best sorghum crop, and the best prospects for a wheat crop it has had for several years, and less severe dust storms.

Field work consisted of plowing, listing, and one-waying plots, taking soil moisture samples, and opening sorghum shocks to hasten drying.

Maximum temperature, 69°; minimum, 6°; precipitation, 0.39 inch.

TUCUMCARI:

December was comparatively warm, calm, and dry. Not only was the mean temperature high, but the lowest recorded temperature was 10° above zero. Precipitation totaling 0.24 inch was received.

Total precipitation for the year was 12.71 inches, compared with a long-time, 1905-40, mean of 16.08 inches. The average annual precipitation of the past seven years, 1934-40, is 12.27 inches.

Crops in 1940 were far below average, but they were remarkably high considering the periods of drought. The crop year precipitation, October 1, 1939, to September 30, 1940, was 11.82 inches. From May 29 until August 8 only 1.07 inches precipitation was received. Only 0.35 inch was received from August 25 until November 20.

Prospects are brighter, since 2.74 inches precipitation was received in November, than they have been at this time of year in some years. Crop land is thoroughly moistened to a depth of more than 2 feet, and ranges should pass through the winter in excellent condition. Wheat which is up will grow rapidly with the advent of a few warm days; but much of the wheat land is unseeded, has been seeded only recently, or shows only a few surviving seedlings.

DALHART:

The moderate temperatures during December permitted the completion of all outside fall crops work. Threshing was completed early in the month and stover weighing and fall plowing later in the month. There remains to be done the usual winter work, and in addition all trees will have to be pruned and shaped on account of the injury by ice in November. The bagged seed heads of sorghum also remain to be threshed.

Yields of all crops were light in 1940. This was especially true for the cowpeas, peanuts, pinto beans, and soybeans. Yields from the drilled sorghum plots were exceptionally light. Sorghum varieties on cropped land were seasonally small, while those on fallow were seasonally good. The average yield of milo on the rotation project was 11.9 bushels per acre, and the average of the kafir plots was 10.4 bushels. These yields are not high, but they are considered good for the season. There was stored moisture in the surface foot only, except for the fallow plots, at the start of the tillage period for row crops; the seasonal precipitation was the lowest received in the 33 years that the station has been operated.

The sorghums on both the experimental plots and the increase fields have been recleaned. Good test weights were the rule rather than the exception. The increase fields of Finney milo produced a larger than normal sized grain with a test weight also above the average. A rather good supply of increase seed is on hand of the resistant strains of Wheatland and Beaver milo.

Maximum temperature, 74°; minimum, 8°; precipitation, 0.38 inch. The mean maximum for the month was 51°; the mean minimum, 24°; the mean temperature, 38°. The precipitation for 1940 was 12.74 inches, the 33-year average is 17.27 inches.

BIG SPRING:

Weather during December was unusually warm and damp. Although precipitation during the month was rather light, there were a good many days when it was just damp enough to prevent cotton picking and other field work. The total rainfall for the year was 16.13 inches as compared with a long time average of 18.96, or 2.83 inches below normal. The total for the growing season was 10.69 inches, whereas the average for this period is 12.92, or a deficiency of 2.23. In other words all but 0.60 inch of the total deficiency occurred during the growing season. This shortage, together with a lack of subsoil moisture at the beginning of the season, reduced yields materially.

With the exception of some milo spacing heads, all threshing of grain and forage sorghums and peanuts was completed during the month. All fall tillage work was finished during this time. Soil moisture conditions were such that a very good job of fall plowing and listing was accomplished. Other work consisted of hauling and weighing sorgo stover from the plots, husking corn, and picking the few remaining bolls on the cotton plots.

Maximum temperature, 74°; minimum, 23°; precipitation, 0.62 inch.

LAWTON:

December weather was very mild with a monthly minimum of 22°. There was but little wind movement, and the surface soil remained too wet throughout the month to permit any tillage operations. Precipitation fell in small amounts and was distributed from the 4th to the 31st, totaling 1.23 inches. A freezing mist on the 14th turned to rain and sleet during the night that sheathed the ground and all vegetation with a coat of ice on the 15th. A good many small limbs and some of the larger ones that were naturally in a weak condition on many of the trees, principally Chinese elm, broke before the ice melted.

Although drought conditions prevailed in the early spring to the detriment of small grains, rainfall was well distributed the remainder of the year, except in October, resulting in an annual total of 29.01 inches. The absence of protracted periods of summer heat and drought was in sharp contrast to those of recent years.

The condition of wheat and barley was good at the close of December. Volunteer oats greened up somewhat during the month, but those varieties that were injured in November did not show any improvement.

WOODWARD:

The month of December was 5° warmer than normal, equable temperatures prevailing. Precipitation totaling 0.75 inch slightly exceeded the average, and occurred chiefly in the form of rain with the exception of a 1.0 inch fall of mixed snow and sleet on the 14th. Wind velocities were relatively light.

Certain climatic data recorded for 1940 appear below, departures from 27-year station averages also being shown:

Annual precipitation	18.09 ins.	-4.72 ins.
April-September rainfall	10.53 " (a)	-5.18 "
Total snowfall	21.0 "	11.0 "
Annual mean temperature	57.9° (b)	-0.3°
April-September mean temperature	73.0°	0.2°
Frost free period, Apr. 12 to Nov. 5	208 days	5 days
Highest temperature, 107°; lowest -6°. Extremes in 27 yrs: 114° to / -13°		
Annual wind velocity	7.68 mph	0.21 mph
April- September wind velocity	7.85 mph (c)	0.35 mph
April-September evaporation	55.251 ins.	3.445 ins.

(a) Low seasonal record. (b) Low record of 19° in January.
(c) High record of 9.5 mph in July.

Stover dried slowly following rains late in November, and field-cured weights of sorgo, broomcorn, kafir, and milo were not obtained until December 9. Sorghum row plots, fallow, and general fields were cultivated with wide-spaced shovels to reduce the hazard of soil blowing. Fall plowing was completed on the 20th under very favorable conditions. Increase milo and kafir, and mixed grain for horses were threshed and the sowed-feed hay hauled in. Repairing farm machinery, cars, trucks, and tractors is being done, and painting of buildings went ahead, weather permitting. Several eroded gullies in the vicinity of the reservoir were filled in.

Wheat sown October 1, or earlier, has furnished fair pasture; but later plantings did not make much top growth, although stands in general appear satisfactory. Winter barley shows some killing apparently from a 6° temperature early in November which also caused leaf injury to wheat, especially on continuous cropping methods.

Range livestock generally appear in very good condition, stock water being plentiful, however, feed reserves in some localities are deficient, rains coming too late in the growing season for the best growth of grass. Mr. A. H. Trowbridge of the Fish and Wildlife Service, Department of the Interior, completed a survey of rodent and rabbit population on the Experimental Range Unit. A total of 7 pounds of rodents and rabbits per acre was present on the area. Since this type of range now produces approximately 35 pounds of beef per acre it will be noted that the rodent and rabbit population represents about 17 percent of

the total producing capacity. Propagation and studies of various grass selections are being made in the greenhouse this winter. Considerable grass seed was threshed and cleaned.

N.Y.A. and W.P.A. help have been employed in cleaning out the drainage course and repairing a dike near the station east line. Work also continued in the Spring Creek area. Various sites have been prepared for experimental plantings of trees and shrubs. A number of shipments to cooperators in the southern portions of the territory were made. Routine propagation of materials under greenhouse conditions and crossing of tomatoes is in progress.

Members of the staff participated in a district meeting of County Farm Loan Associations held here on the 13th.

Maximum temperature, 76°; minimum, 14°; precipitation, 0.75 inch; snowfall 1.0 inch.

****